



U.S. DEPARTMENT OF **ENERGY**

2012 Congressional Nuclear Cleanup Caucus

DOE Oak Ridge Office Environmental Management Program
Oak Ridge, Tennessee

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URS | CH2M Oak Ridge LLC



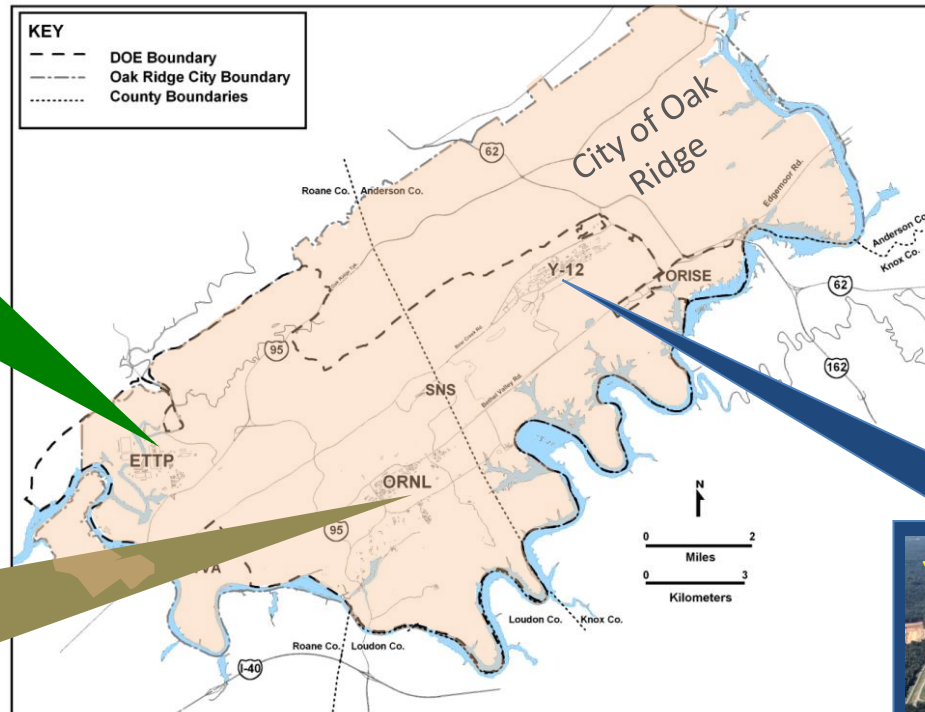
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safety ♦ performance ♦ cleanup ♦ closure

Oak Ridge has a Unique Cleanup Challenge

Oak Ridge is not an isolated or arid site

- More than 700,000 citizens reside or work within a 30-mile radius of the Oak Ridge Reservation
- High levels of rainfall coupled with shallow groundwater carry contaminants to local waterways



Oak Ridge Cleanup Work is Urgent and Essential

- **Our Mission**

- Complete the cleanup of the Oak Ridge Reservation to protect the region's health and environment

- **Our Vision**

- Remediation of the Oak Ridge Reservation will be successfully completed



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Oak Ridge Significantly Contributes to Tennessee's Economy

Environmental Management Projects

- **Use Base and American Recovery and Reinvestment Act (Recovery Act) funding (2009 - 2013)**
 - Fiscal Year 2012 Base funding is approximately \$420 million
 - Anticipated Recovery Act expenditures in fiscal year 2012 total \$115 million



- **Contribute to positive regional impacts such as:**
 - Provide \$1.2 billion in payroll
 - Support more than 14,000 jobs in the region that contribute ~\$90 million in state and local sales tax revenue
 - Contribute to \$4 billion in gross state product



Oak Ridge has Made Substantial Progress

East Tennessee Technology Park (ETTP)

- Completed demolition of two-thirds of the facilities at the former K-25 gaseous diffusion plant
- Cleared 1,400 of 2,200 acres
- Disposed 1.6 million cubic yards of soil and debris
- Removed 7,000 DUF6 cylinders



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Oak Ridge has Made Substantial Progress

Y-12 National Security Complex (Y-12)

- Demolished approximately 150,000 square feet of contaminated buildings
- Completed creek bank stabilization to limit mobilization of mercury contaminated sediment
- Installed a water treatment system to capture contaminated groundwater
- Completed mercury abatement project for storm drains
- Completed cleanup of contaminated scrap metal yard



Y-12 circa 2030



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Oak Ridge has Made Substantial Progress

Oak Ridge National Laboratory (ORNL)

- Completed demolition of 38 contaminated buildings
- Completed processing and shipment of over 500 cubic meters of transuranic waste
- Capped the last remaining burial grounds
- Removed the largest source of groundwater contamination (Tank W1-A)
- Established an extensive groundwater monitoring network to evaluate potential contaminant migration
- Initiated shipment of U-233 Zero Power Reactor Plates to the Nevada National Security Site – first shipment of any inventory in more than 20 years



ORNL circa 2030



There's More for Oak Ridge to Do

- **ETTP**

- Demolish the approximately 250 remaining facilities including two high risk uranium enrichment process buildings (K-25 and K-27)
- Address soil, sediment, and groundwater contamination

- **Y-12**

- Demolish process buildings that cover sources of mercury contamination and other excess facilities
- Address sources of mercury contamination in soils and sediments
- Remediate surface waters and groundwater

- **ORNL**

- Complete disposition of U-233 inventory
- Complete processing of transuranic waste
- Address remaining nuclear materials and demolish excess facilities
- Address soil and groundwater contamination



Oak Ridge is Meeting its Challenges

- Diverse, complex projects
- Enforceable regulatory commitments
- Numerous contractors
- Multiple stakeholders



Environmental
Cleanup



K-33 Project
BV Burial Grounds



Hot Cells Project
34-Building D&D



U-233 Disposition
Project



Y-12 National Security
Complex



Oak Ridge National
Laboratory



TRU Waste Processing
Center

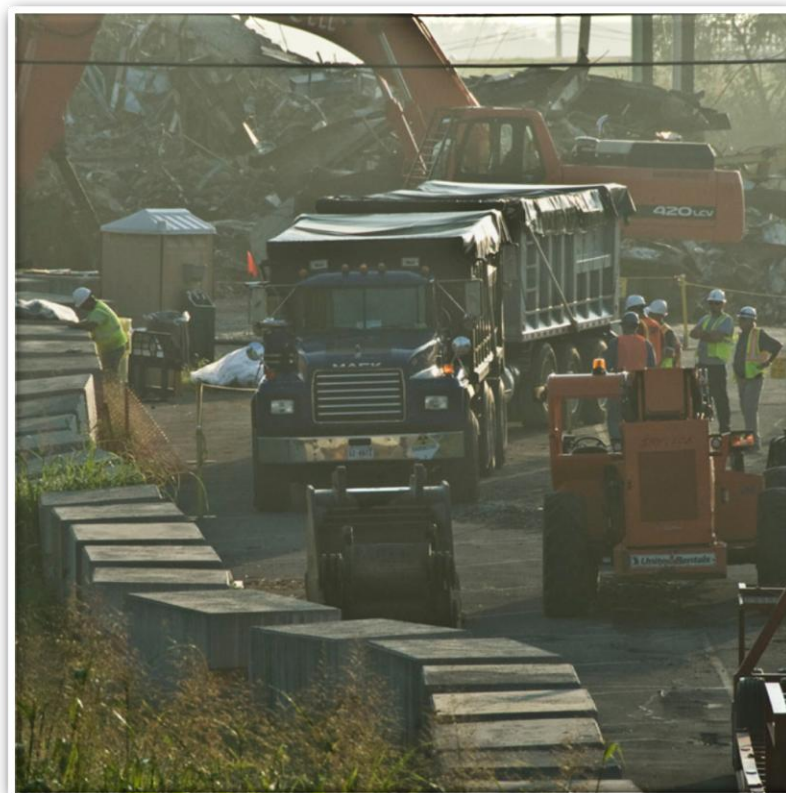


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Oak Ridge is Positioning for the Future

- **Balancing competing risks**
 - Lifecycle cost: ETTP
 - Environmental: Y-12 National Security Complex
 - Nuclear/radiological: Oak Ridge National Lab
- **Optimizing progress and efficiencies while maintaining our outstanding safety record**
 - Utilizing our experienced workforce
 - Re-sequencing work activities
- **Looking for innovative ways to perform work**
 - Creating new approaches
 - Improving use of technology
- **Meeting near-term goals while continuing our longer-term strategic focus**



Cleanup at the Old Scrap Yard at Y-12



Key Considerations for Oak Ridge's Future

- **ETTP -- Lifecycle Cost Risk**
 - Removal of K-25 and K-27 will eliminate considerable security and maintenance costs
 - As ETTP facilities continue to degrade, the cost for D&D continues to increase considerably
- **Y-12 -- Environmental Risk**
 - Nearly 20 million pounds of mercury were used at Y-12
 - 2 million pounds are unaccounted for and roughly 700,000 pounds are believed to have been released into the environment
- **ORNL -- Nuclear/Radiological Risk**
 - More than 26 million curries are currently stored at ORNL



Oak Ridge Near-term Goals

- Complete demolition of Buildings K-25 and K-27 at ETTP
- Continue to identify ways to address mercury releases at the Y-12 site, including reducing mercury in surface waters, characterizing potential sources, and preparing facilities for demolition
- Remove half of the U-233 inventory at the ORNL and make final decisions on remaining nuclear materials
- Continue processing transuranic waste (debris) and prepare for construction of a new sludge processing facility



Oak Ridge's Plan for the Future

- **ETTP**

- Complete demolition of the highest-risk facilities -- Buildings K-25 and K-27
- Address remaining facilities after critical cleanup begins at Y-12 and ORNL

- **Y-12**

- Complete Recovery Act projects and finalize overall site cleanup strategy/plan
- Initiate preparatory activities, such as treatability studies and characterization, to begin next phase of cleanup
- Initiate building pre-demolition activities as soon as ETTP high-risk facilities are demolished

- **ORNL**

- Complete Recovery Act projects
- Complete U-233 direct disposition and transuranic waste processing
- Initiate cleanup of remaining facilities after work is underway at Y-12



UCOR Scope of Work

- Remediate ETTP
 - K-25 demolition & waste disposal (historic mile-long uranium enrichment facility built in 1943)
 - Demolition and preparation for demolition of other facilities
 - Remediation of soil, scrap yards, and burial areas
- Operate treatment facilities and landfills on the DOE Oak Ridge Reservation
- Clean up other specified areas on the DOE Oak Ridge Reservation



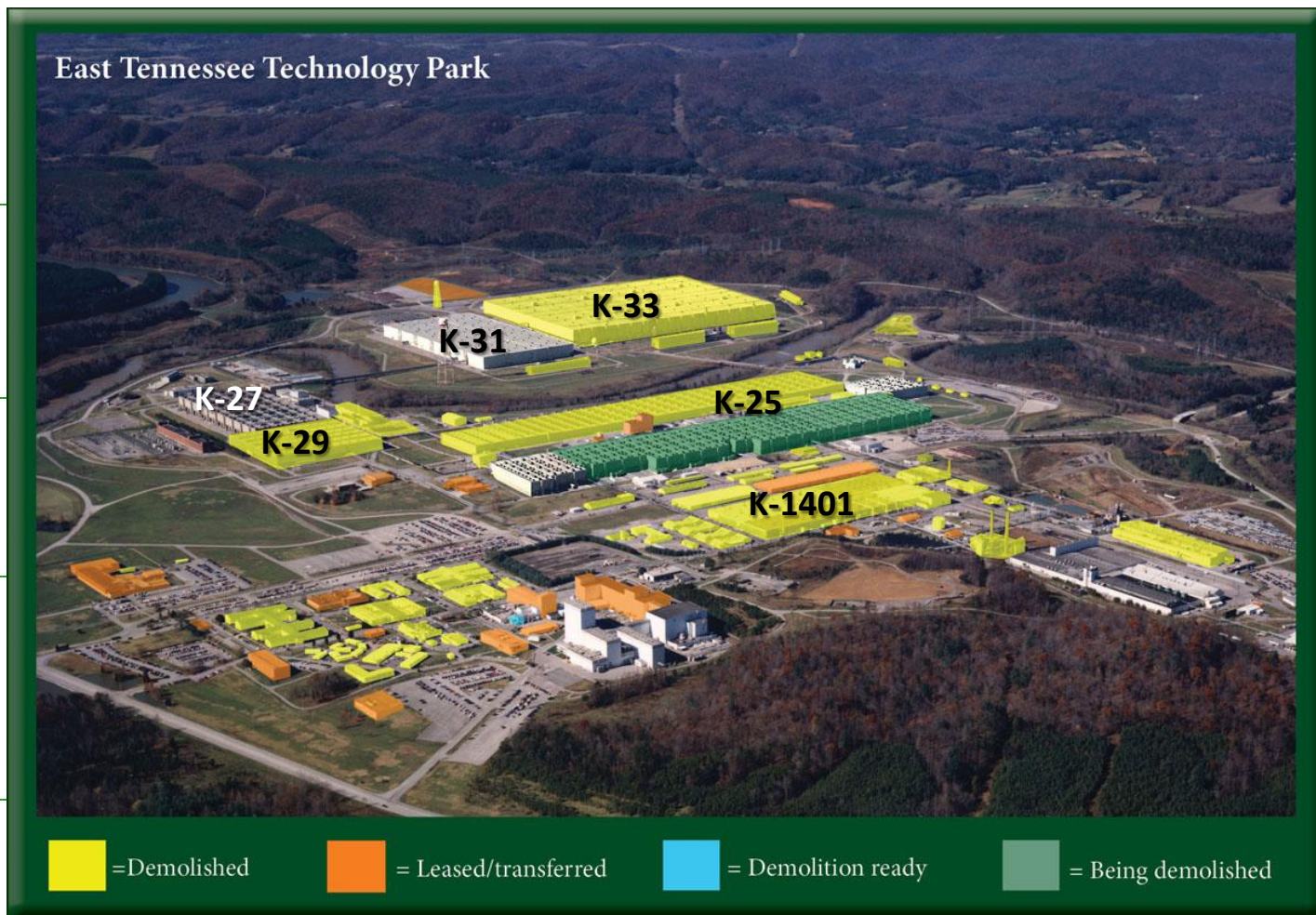
Status of ETTP Cleanup

Facilities demolished:
246

Waste removed:
1.6 million yd³

DUF₆ cylinders removed:
7,000

**Area cleared for
unrestricted use:**
1,400 acres



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ETTP Project Highlights

- Continuing demolition of K-25 Building east wing and disposing of most waste (building debris & scrap) at the Environmental Management Waste Management Facility



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ETTP Project Highlights (continued)

- Completed debris removal from 6.5-acre K-1070-B burial ground. Work was added to URS|CH2M Oak Ridge, LLC (UCOR) contract during transition and was completed in December, one month early. The area is being graded and a cover will be installed.



Oak Ridge National Laboratory (ORNL) Project Highlights

- Removed Tank W-1A, the primary source of groundwater contamination at ORNL. The tank has been shipped to the Nevada National Security Site for disposal. Excavation of contaminated soil will be complete this month.

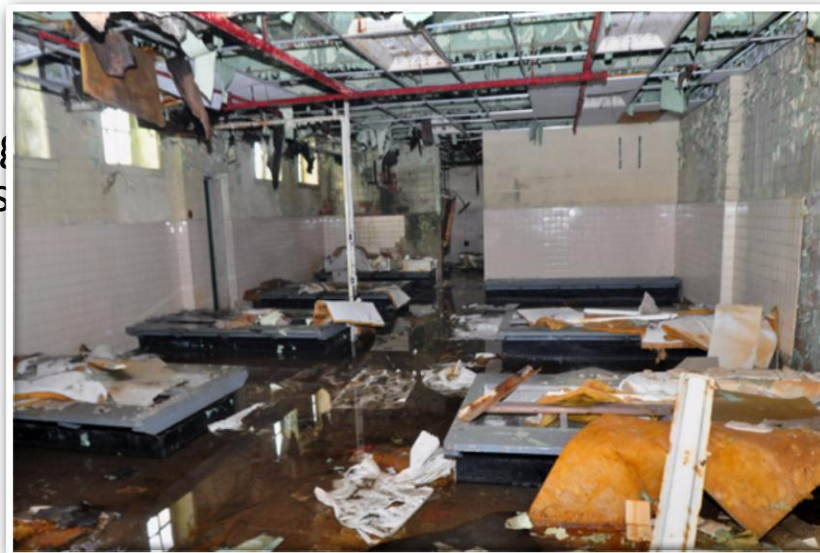


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Working Cost Efficiently

- UCOR took over the ETTP contract on August 1, 2011
- Challenged by addition of new scope due to Material Differences and Authorized Unpriced Work
- UCOR took a number of actions to improve efficiency
 - Implementation of cost-effective management approaches
 - Recognition of cost efficiencies in work scope implementation
 - Deferral of lower priority Deactivation and Decommissioning (D&D) work (Poplar Creek facilities)
- UCOR actions resulted in cost reductions of \$49M
- Results in funding available for K-27 acceleration

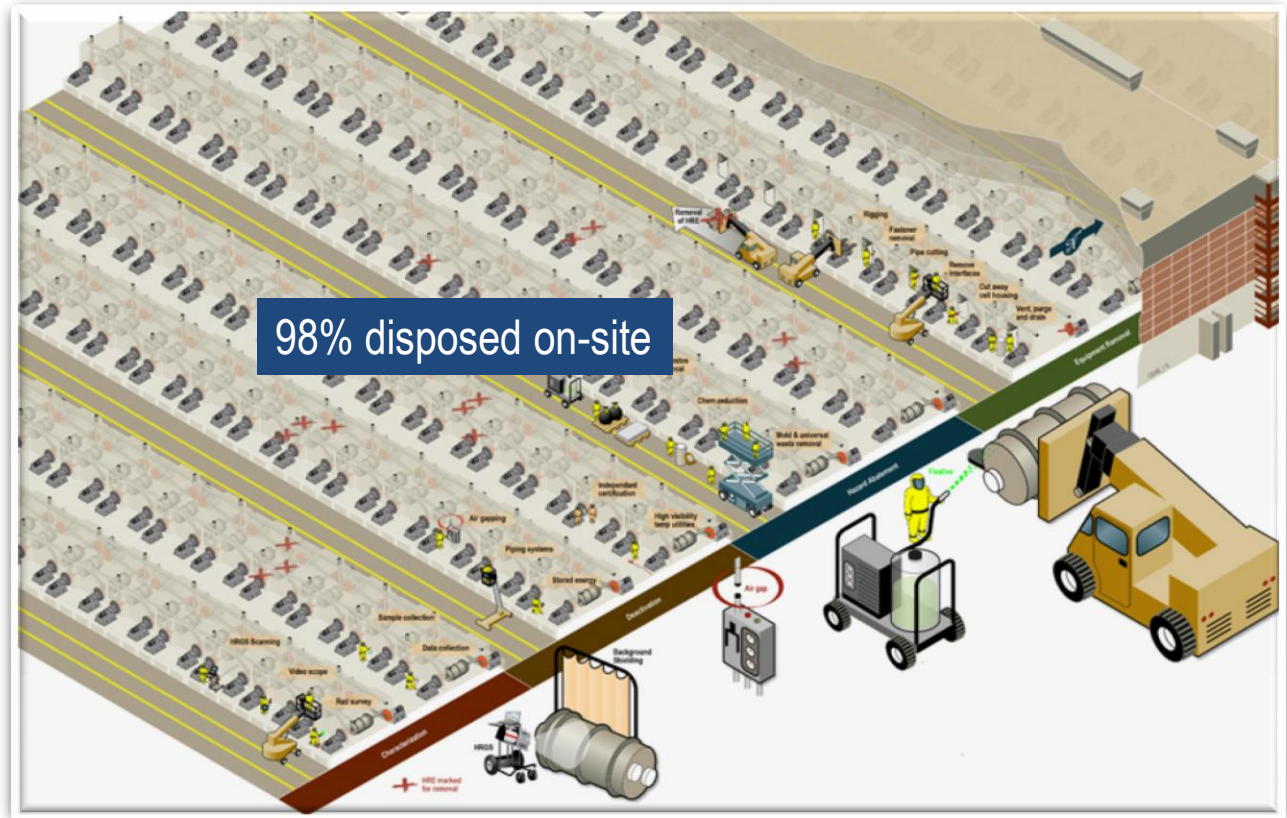


Inside the K-27 Building





Implementing Unique Technologies to Improve Safety and Efficiency

- Assembly line approach used to consistently demolish and remove waste from the K-25 Building
 - Characterization
 - Deactivation
 - Hazard abatement
 - Equipment removal
- Complements UCOR's strategy of removing waste as it is generated, avoiding piles of waste that must be maintained and monitored until disposition



Safety Performance


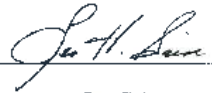
- UCOR Injury/Illness Performance
 - Zero injuries for the first five months of the contract
 - More than 1.6 million hours without a Lost Work Day Away Case
- Issued UCOR Safety Conscious Work Environment Policy Statement
- Began process of obtaining Voluntary Protection Program certification
- Environment, Safety, Health, and Quality Assurance cost efficiencies and savings to date: \$6.5M/year



Safety Conscious Work Environment Policy Statement

This policy establishes Oak Ridge Office of Environmental Management's (EM) and UCOR's commitment to foster and maintain a safety-conscious work environment in all facilities and for all work. This policy is based on the following principles:

- Safety is a prerequisite for all work. Our expectation is that every employee goes home in the same condition in which he or she came to work. Our goal is zero injuries.
- All employees are encouraged and expected to promptly report all injuries and illnesses.
- All employees are encouraged and expected to have a questioning attitude and suspend/stop work if they feel a job cannot be done safely.
- All members of the EM and UCOR leadership team, up to and including the EM Acting Manager and the UCOR President and Project Manager, have an open door policy, especially pertaining to safety.
- Employees have, and are encouraged and expected to use, multiple venues to express safety concerns. These include but are not limited to their management chain and Employee Concerns.
- Employee involvement is the cornerstone of our safety culture and is essential to the successful implementation of the Integrated Safety Management System (ISMS), Nuclear Safety, the Voluntary Protection Program, Behavior Based Safety, and other ESH&QA program elements.
- Employees are encouraged to raise safety issues and concerns without fear of reprisal. The EM/UCOR leadership team will address and resolve issues and concerns in a timely manner.



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UCOR President & Project Manager

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Our Work Delivers for the Public Interest

- Demolition of deteriorated facilities like K-25 minimizes environmental release potential and worker hazards
- Remediation activities mitigate potential soil, surface water, and groundwater contamination
- Completion of higher-risk projects simplifies subsequent demolition and cleanup
- Community involvement in cleanup decisions through meetings, publications, and the Web facilitates consensus building

